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(6) Psychotropic Prescription Medication in Vietnam⁵

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ABSTRACT

Army physicians (primary care physicians and psychiatrists) performing out-patient services for troops on duty in Vietnam were surveyed in mid-1967. Two Navy psychiatrists were also included in the survey. All were asked to report information on the psychotropic drug prescriptions they wrote during the immediately preceeding 30-day period. Less than 50 per cent of the 256 physicians who were sent questionnaires returned them. From the available data an estimate of 12.5 per cent per year was derived for the psychotropic drug prescription rate. The drugs were used to treat a wide range of conditions the most frequent of which were (a) gastroenteritis (by the primary care group) and (b) anxiety (by both physician groups). Depression was infrequently listed as the presenting condition. Primary care physicians differed from psychiatrists on several prescription variables. The drugs were perceived by the prescribers as being quite efficacious for most of the conditions treated.

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The Vietnam conflict represents the first period of armed hostility in which this country engaged after the advent in the mid-1950's of modern psychopharmacology. Since combat is ordinarily regarded as one of the most stressful of human activities, and since the new tranquilizing drugs have been hailed as distress reducers, it seems opportune to inquire into prescriptive psychotropic drug use at this particular crossroads.

The data presented here were gathered more than a decade ago but were not studied formally until recently. The study design is not elegant but the point in history that is punctuated by the data may well be a benchmark if the future does indeed bring intensified efforts by man to influence his own behavior in war, as well as in peace, by ingesting and injecting highly sophisticated, technologically-derived chemical substances.

The study is a survey, not a census nor a prospective following, and therefore provides only a memory-based, microscopic, cross-sectional view of the subject-matter addressed. Nevertheless the data are assembled so as to attempt to describe epidemiologically who prescribed how much of what for whom, when, for what purpose, toward what end.

METHOD

Officer personnel rosters for all of the major Army troop units serving in Vietnam during mid-1967 were used to identify those medical corps officers assigned troop clinic or mental health clinic duties. The names of 254 Army physicians (233 non-psychiatrists and 21 psychiatrists) were found on the rosters. A psychopharmacologic survey form was distributed to each of these non-hospital-based Army physicians, and additionally to two Navy psychiatrists

serving troop clinics in a Marine division.

The questionnaire was mailed in June-July 1967. It presented a list of 28 psychoactive medications and requested the physician respondent to "indicate all uses of the drugs listed, even if for conditions other than primarily psychiatric." For each drug name on the form, the physician was asked to indicate for each patient for whom the drug was prescribed during the immediately preceeding 30-day period the following essentials: (a) the dosage and length of time prescribed, (b) the condition for which prescribed, and (c) the results of the medication. The cover letter soliciting the cooperation of each questionnaire recipient was signed by one of the authors (AWJ), then Psychiatry and Neurology Consultant, United States Army, Vietnam.

Physicians Reporting

Of the 233 questionnaires mailed to the non-psychiatrists, 110 (i.e., 47 per cent) were returned. Ninety-two of the 110 respondents indicated that one or more of the psychotropic medications had been prescribed during the preceeding 30-day period; 18 reported that they had prescribed none of the drugs during the period surveyed. Of the 21 Army psychiatrists who received the questionnaires, only six (or 29 per cent) responded. Both Navy psychiatrists also responded. All eight psychiatrist respondents indicated they had prescribed one or more of the drugs during the preceeding 30-day period.

Of the 92 non-psychiatrist physicians, 67 were by training general medical officers, eight were internists, eight were general surgeons, five were flight surgeons, one was an orthopedic surgeon, one an anesthesiologist, one a preventive medicine officer, and one an obstetrician-gynecologist. However, at the time of the survey each was serving as a primary care physician for troops in a combat zone. The eight psychiatrists functioned also in outpatient service systems but within their speciality, receiving referrals from various sources including the physicians manning the troop clinics. The two Navy psychiatrists were lieutenant commanders, the six Army psychiatrists were captains, and of the non-psychiatrists, 90 were captains and two were lieutenant colonels.

Units Represented

The 100 prescribing physicians represented some ten major units serving in Vietnam in mid-1967: the First, Fourth, Ninth, and Twenty-fifth Infantry Divisions, the First Cavalry Division, the First Marine Division, the Twenty-third Artillery Group, the Fifth Special Forces Group, and two airborne outfits.

Patients Served

The prescriptions written were for outpatient active duty military personnel (predominantly Army) serving in Vietnam sometime during May-July 1967. Since the reported data were not always accompanied by explicit patient identifiers, it was not possible to learn the prescription to patient ratio. However, it can perhaps be assumed that the number of prescriptions written was approximately equal to the number of patients served in the 30-day period of the survey. Again, because of inexact reporting, it was occasionally

necessary to impose an estimate of the actual number of prescriptions written whenever such adjectives as "several" (=3) or "many" (=10) appeared in the patient's name column of the survey form.

Drugs Used

Of the 28 drugs listed on the questionnaire, six (Prolixin, Vesprin, Nardil, Parnate, Taractan, Desipramine) were not prescribed by any of the reporting physicians. The 22 drugs that were prescribed can be categorized as follows: major tranquilizers (Thorazine, Mellaril, Stelazine, Compazine,* Serpasil*); minor tranquilizers (Equanil/Miltown, Librium, Valium, Vistaril, Atarax); anti-depressants (Tofranil, Elavil, Aventyl, Ritalin); stimulants (Dexadrine, Dexanyl); and sedatives/hypnotics (Phenobarbital, Amytal, Seconal, Nembutal, Doriden, Chloral Hydrate).

*Because of their unique properties, Compazine and Serpasil were removed from the major tranquilizer category and were studied separately.

FINDINGS

Prescription Rates

The 110 Army primary care physicians (i.e., the non-psychiatrists) who returned the survey form represented approximately 47 per cent of the total Army physician contingent assigned to primary care troop clinic duty in Vietnam. There were 295,510 Army troops in Vietnam as of 30 June 1967.* Thus, multiplying .47 times 295,510 gives an estimate of 138,890 soldiers-at-risk served by the 110 primary care physicians who returned the questionnaires. A total of 1258 psychotropic drug prescriptions were reported by these primary care physicians. Using as a numerator the 1258 prescriptions and as a denominator the 138,890 soldiers-at-risk, the prescription rate for the 30-day period was 9.1 per 1000 soldiers-at-risk, or 10.9 per cent of the total strength per year. However, this usage must be incremented by the six Army psychiatrists' prescriptions to obtain a total usage estimate. The psychiatric contribution becomes: $.29 \times 295,510 = 85,698$; $116/85,698 = 1.4$ per 1000 soldiers-at-risk per month, or 1.6 per cent of the total strength per year. Combining the two sets of data, the psychotropic drug prescription rate for Army troops in Vietnam in 1967 becomes 10.5 per 1000 per month, or 12.5 per cent per year.

Of the total of 1420 psychotropic medication prescriptions that were written by the 100 prescribing physicians in the 30-day period, 1258 were written by the 92 primary care physicians for an average of 13.7 psychotropic

*According to Office of the Assistant Secretary of Defense (Comptroller), Directorate for Information Operations and Control, Washington, DC.

prescriptions per utilizing physician, and 162 were written by the eight psychiatrists reporting and prescribing for an average of 20.2 per utilizing psychiatrist. Although other studies have observed that non-psychiatric physicians introduce more psychotropic medication into the population in general than do psychiatrists,¹ this does not appear to be the case on a per prescriber basis--at least not so with the U. S. Army in Vietnam.

Drugs Prescribed

The frequencies and percentages of the different categories of psychotropic drugs prescribed in the 30-day period for the sample of primary care physicians and for the sample of psychiatrists are shown in Table 1. Note that prescriptions for two drugs, Compazine and Serpasil, were limited almost entirely to the primary care physicians. Note further that Compazine accounted for 45 per cent of the prescriptions made by the non-psychiatrists. Compazine and Serpasil were not principally used for their psychoactive effects, but instead were prescribed mainly to relieve gastroenteritis and hypertension respectively (see Table 2). For this reason, utilization percentages were also calculated after deleting Compazine and Serpasil (see data columns three and six in Table 1) so that a purer comparison between physician groups on psychotropic drug use could be drawn. Primary care physicians used minor tranquilizers (predominantly Librium) most frequently, psychiatrists used major tranquilizers (predominantly Thorazine) most frequently, both groups used sedative/hypnotics (predominantly barbiturates) moderately frequently, and neither group prescribed many anti-depressants.

Insert Table 1 about here.

Conditions Treated

A wide gamut of conditions were entered on the survey form by the pre-scribing physicians. These problem descriptors were placed into categories for study, as listed in Table 2. Table 2 shows the number and per cent of conditions treated by either the primary care physician group or the group of psychiatrists. The drugs used to treat each condition are indicated as percentages of the total instances of that condition treated by each physician group.

Gastroenteritis was the predominant problem treated by the primary care physician group, accounting for 45 per cent of the total. Compazine was used to treat gastroenteritis in 96 per cent of the 556 cases. The group of eight psychiatrists reported no cases of gastroenteritis.

Anxiety looms as the next most frequent problem treated by the primary care physicians and as the most frequent problem reported by the psychiatrists. Insomnia, related as it is to anxiety, was next in frequency for both treater groups. Surprisingly low in frequency for either group was depression.

In those conditions seen by either group (alcohol abuse, anxiety, depression, headache, insomnia, psychosis, psychosomatic symptoms), there was considerable agreement in the selection of drug category used to treat the patient. Major tranquilizers were used most heavily by either physician group for psychosis and for alcohol abuse, minor tranquilizers predominantly for anxiety, and sedatives/hypnotics for insomnia.

Within the anxiety category are 56 cases of "combat fatigue" or "battle fatigue." When these were looked at separately it was found that 44 of them (79 per cent) were treated by the primary care physicians. Unlike what was the case with respect to the broader category of anxiety, the major tranquilizers were the treatment of choice by either treater group for combat fatigue. Of

the 56 cases, 64 per cent were treated with major tranquilizing agents.

Insert Table 2 about here.

Dosage and Duration

Thorazine accounted for most (86 per cent) of the major tranquilizer prescriptions and Librium accounted for most (65 per cent) of the minor tranquilizer prescriptions. Therefore it becomes of interest to compare the two groups of physicians with respect to the particulars of their Thorazine and Librium prescriptions.

The psychiatrists prescribed higher daily dosages of both Thorazine and Librium than did the primary care physicians. Sixty-eight per cent of the Thorazine prescriptions written by the primary care physicians were in the dose range of 50 to 150 mg per day; 72 per cent of the Thorazine prescriptions written by the psychiatrists were in the 150 to 500 mg per day range. For Librium, 92 per cent of the primary care physician prescriptions were for daily doses of 30 or 40 mg, while 23 per cent of the psychiatrist prescriptions were for daily doses of 60 mg.

As for duration, the psychiatrists prescribed Thorazine for longer periods of time than did the primary care physicians. The primary care physicians issued 97 per cent of their Thorazine prescriptions for a period of from one to seven days (85 per cent were for one day only), while the psychiatrists wrote only 48 per cent of their Thorazine prescriptions for 1-7 days (36 per cent were prescribed prn). A similar though less pronounced differential was true in the case of Librium: 70 per cent versus 55 per cent.

Turning specifically to combat fatigue, it was observed that daily dosages of Thorazine ranged from 20 to 300 mg. The usual Librium daily dose was 30 or 40 mg. Thorazine was usually prescribed for a period of from one to three days,

although six such cases received prn prescriptions. The typical duration for Librium as treatment for combat fatigue was 2-3 days, never prn.

Seventy-seven per cent of all of the psychotropic drug prescriptions written were for administration orally, 15 per cent intra-muscularly, one-half of one per cent intravenously, and seven per cent by a combination of injection followed by ingestion.

Results Obtained

The survey form asked the prescribing physician to indicate the results of the medication prescribed. Responses were placed into a four-fold categorization: excellent or good, fair or satisfactory, minimal change or no improvement, and worsening of condition. Table 3 is a listing of the resultant percentages for each of the four levels of treatment outcome for each condition treated by either group of physicians. (Total Ns for either group are abbreviated because of incomplete data.)

In general the psychotropic drugs prescribed were perceived by the prescribing physicians as being quite efficacious. Perhaps the primary care physicians were somewhat more impressed with the results they saw than were the psychiatrists. A heavy proportion of the extremely favorable opinion of the non-psychiatrists can be found in the results assigned to the 550 gastroenteritis treatments. In treating anxiety the psychiatrists seemed a bit more skeptical of the ensuing results than did the primary care physicians. Also, psychiatrists assigned their poorest result ratings to cases treated for psychosis.

Combat fatigue outcome was rated as follows: Primary care physicians rated the result on 75 per cent of their combat fatigue treatments as excellent/good, 22 per cent as fair/satisfactory, and three per cent as no

improvement; the psychiatrists rated 25 per cent as excellent/good, 75 per cent as fair/satisfactory.

When the results obtained are studied by drug used (see Table 4), again the principal finding emerges that all of the categories of drugs are seen as being quite efficacious. Across condition and across drug, then, the prescribing physicians were of the opinion that psychotropic drug treatment was by and large quite influential in reducing the problems presented.

Insert Tables 3 & 4 about here.

RECAPITULATION

The principal value of the data presented here is to be found in the nature of the sample of patients for whom the drugs were prescribed. We know of no other study published in the open literature of psychotropic drug prescriptions on military troops serving in a combat zone.

The shortcomings in the study are many. The physician response rate was poor, particularly among the psychiatrists. The data that were reported were not always exact nor meticulously recorded, seeming at times to be drawn from memory rather than medical records. Number of patients served and number of prescriptions written were necessarily confounded in the analysis.

What have we learned? Keeping in mind the nature of the sample and the limitations of the study, let us review the major findings:

(1) The best estimate for the annual psychotropic drug prescription rate was 12.5 per cent.

(2) Psychiatrists prescribed more psychotropic drugs per prescribing physician than did the primary care physicians, with such a by-discipline prescription ratio being 1.5 (i.e., 20.2 to 13.7).

(3) Gastroenteritis was the most frequently occurring condition to be treated with the psychotropic drug armamentarium of the primary care physician. Compazine was the drug of choice for this condition and the results of the treatment were judged by the treaters to be very good.

(4) Excluding gastroenteritis, the most frequently occurring condition treated with psychotropic drugs by either primary care physician or by psychiatrist was anxiety. It was treated principally with minor tranquilizers and the results noted were quite good.

(5) Combat fatigue, a subset of the anxiety cases, was treated most frequently with a major tranquilizer and the results were usually good.

(6) A wide variety of conditions were treated with the psychotropic agents, especially by the primary care physicians. In general the results described were quite efficacious, with possible exceptions in the case of anorexia and headache.

(7) Primary care physicians tended to view the results obtained from the medications used more favorably than did psychiatrists.

(8) Psychiatrists tended to prescribe the psychotropic drugs in heavier doses and for longer periods of time than did the primary care physicians.

(9) Disallowing the highly frequent use of Compazine for gastroenteritis, one out of every five psychotropic drugs prescribed by either the primary care physicians or the psychiatrists was a sedative/hypnotic. Obviously the newly established generation of tranquilizing medications has not completely replaced the barbiturates, at least not in 1967.

(10) Presenting conditions for which psychotropic drugs were prescribed were rarely labeled as depression by the primary care physicians, and seldom

labeled as such by the psychiatrists. This is a rather surprising finding in view of the conclusions of many workers that depression may well be quite prevalent in American culture.^{2,3,4}

Let the data we have presented here, and the constructions we have imposed upon them, serve as the initial documentation of the use of modern psychotropic medication in military troops serving in a combat zone.

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Table 1

Psychotropic Drug Prescriptions Written During a 30-day Period by Primary Care Physicians and by Psychiatrists for Soldiers Serving in Vietnam in mid-1967

<u>Drug Prescribed</u>	Primary Care Physicians (N=92)			Psychiatrists (N=8)		
	<u>No.</u>	<u>% 7 rows</u>	<u>% 5 rows</u>	<u>No.</u>	<u>% 7 rows</u>	<u>% 5 rows</u>
Major tranquilizer	135	10.7	19.8	65	40.1	40.4
Minor tranquilizer	366	29.1	53.7	56	34.6	34.8
Anti-depressant	11	.9	1.6	5	3.1	3.1
Stimulant	37	2.9	5.4	0	-	-
Sedative/hypnotic	132	10.5	19.4	35	21.6	21.7
Total first 5 rows	681		99.9	161		100.0
Compazine	566	45.0		1	.6	
Serpasil	11	.9		0	-	
Total all 7 rows	1253	100.0		162	100.0	

Table 2

Conditions Treated by Primary Care Physicians and by Psychiatrists;

Drugs Used by Either Group to Treat Respective Conditions

Condition	Treated by			Drug Used (per cent of corresponding No.)											
	No.	%	Psy No.	By Pri: Primary Care Physicians			By Psy: Psychiatrists			By Pri: Primary Care Physicians			By Psy: Psychiatrists		
				Maj	Min	Ant-i	Maj	Min	Ant-i	Maj	Min	Ant-i	Maj	Min	Sed/ Hyp
Alcohol abuse	33	2.6	19	91	3					68	16	5	5	5	
Anorexia	5	.4	0	60											
Anxiety	389	31.0	75	20	67					35	60	1	4	4	
Low back pain	34	2.7	0	100											
Depression	9	.7	7	33	11	33	22			29	43	29			
Gastroenteritis	566	45.0	0	3	100										
Headache	10	.8	3							67	33				
Hypertension	22	1.8	0												
Insomnia	67	5.3	31	12						6			94		
Muscle spasm	13	1.0	0	100											
Narcolepsy	10	.8	0												
Obesity	30	2.4	0												
Peptic ulcer sym	37	2.9	0												
Physical sym, other	11	.9	0	9	64	18									
Psychosis	3	.2	18	100						100					
Psychiatric dx, other	0	-	5							60	40				
Psychosomatic sym	6	.5	3	83	17					100					
Seizures	12	1.0	0												
Total	1257	100.0	161	11	29	1	3	10	45	1	40	35	3	22	1

Table 3

Results Obtained by Primary Care Physicians
and by Psychiatrists from Treating Presenting Condition

Condition	Treated by	N	Result (per cent of N)			
			Excel/ Good	Fair/ Satis	No Better	Worse
Alcohol abuse	Pri	32	25	72	3	
	Psy	14	29	64	7	
Anorexia	Pri	5	40		60	
Anxiety	Pri	343	52	40	8	1
	Psy	53	40	30	30	
Low back pain	Pri	33	55	12	33	
Depression	Pri	9	67	22	11	
	Psy	6	67	17	17	
Gastroenteritis	Pri	550	85	15		
Headache	Pri	10	30	10	60	
	Psy	1		100		
Hypertension	Pri	20	80		10	10
Insomnia	Pri	64	89	8		3
	Psy	12	100			
Muscle spasm	Pri	13	8	92		
Narcolepsy	Pri	9	22	78		
Obesity	Pri	27	48	26	19	7
Peptic ulcer sym	Pri	37	73	8	19	
Physical sym, other	Pri	10	60	40		
Psychosis	Pri	1		100		
	Psy	14	43	14	43	
Psychiatric, other	Psy	2	100			
Psychosomatic sym	Pri	5	40	20	40	
	Psy	2	50	50		
Seizures	Pri	12	83		17	
Total	Pri	1180	69	24	6	1
	Psy	104	48	29	23	

Table 4
Results Obtained by Drug Used

<u>Drug Prescribed</u>	<u>N</u>	<u>Result (per cent of N)</u>			
		<u>Excel/ Good</u>	<u>Fair/ Satis</u>	<u>No Better</u>	<u>Worse</u>
Major tranquilizer	172	44	50	6	
Minor tranquilizer	364	52	33	16	
Anti-depressant	13	54	46		
Stimulant	34	47	32	15	6
Sedative/Hypnotic	143	71	13	12	4
Compazine	550	86	14		
Serpasil	9	89		11	
Total	1285	67	25	7	1